

Further north in the Eastern Goldfields high numbers were recorded in River Gums (*Eucalyptus camaldulensis*) at BW in June and low numbers in February and October. Calls of birds in June were recognisably different from calls recorded elsewhere in the southern Goldfields or wheatbelt and according to John Blyth (National Museum of Victoria), who was with me at the time, these calls were similar to calls in Victoria. A specimen collected at BW had differences in plumage when compared with specimens from southern parts of the Eastern Goldfields or the wheatbelt.

Thus, the taxonomic status of the Striated Pardalote in the northern parts of the Eastern Goldfields needs investigation. Call and plumage differences suggest that some birds may be different from the typical *P. striatus substriatus* of southern parts. At times (e.g. winter) there may be two forms present in the Eremaean zone when southern birds disperse northwards. This second form in the Eremaean Botanical Province may be restricted to patches of eucalypt woodland or mallee, or alternatively, as suggested by Ford (in Sedgwick *ibid*), they may be birds which have crossed the Nullarbor region from the east. The likelihood of a second Eremaean form is strengthened by observations of breeding in April and May in the North West Division (Johnstone, 1983). Thus the systematic position of the Striated Pardalote in the Eremaean zone needs to be investigated.

ACKNOWLEDGEMENTS

I am grateful to D.J. McGauran who kindly gave me access to his list of daily bird observations at East Yuna and to Lisa Peters for collating data from field notebooks.

REFERENCES

- BIOLOGICAL SURVEYS COMMITTEE 1984. The biological survey of the Eastern Goldfields of Western Australia. Part 1. Introduction and methods. *Rec. West. Aust. Mus.* Suppl. 18
- DELL, J. 1977. Birds of Bendering and West Bendering Nature Reserves. *In: Biological Survey of the Western Australian Wheatbelt, Part 3. Rec. West Aust. Mus.* Suppl. 5:31-46.
- DELL, J. 1978a. Birds of Dongolocking Nature Reserve. *In: Biological Survey of the Western Australian Wheatbelt, Part 5. Rec. West. Aust. Mus.* Suppl. 6:59-70.
- DELL, J. 1978b. Birds of Durokoppin and Kodj Kodjin Nature Reserves. *In: Biological Survey of the Western Australian Wheatbelt, Part 6. Rec. West. Aust. Mus.* Suppl. 7:55-68.
- DELL, J. 1981. Birds of Billyacatting Hill Nature Reserve. *In: Biological Survey of the Western Australian Wheatbelt, Part 13. Rec. West. Aust. Mus.* Suppl. 13:35-48.
- DELL, J. & MCGAURAN, D.J. 1981. Birds of East Yuna and Bindoo Hill Nature Reserves and adjacent areas. *In: Biological Survey of the Western Australian Wheatbelt, Part 14. Rec. West. Aust. Mus.* Suppl. 13:67-93.
- GARDNER, C.A. 1942. The vegetation of Western Australia with special reference to climate and soils. *J. Proc. R. Soc. West. Aust.* 28:11-87.
- JOHNSTONE, R.E. 1983. Birds of the Hamersley Range National Park, Western Australia. *In: Muir, B.G. (ed.). A faunal survey of the Hamersley Range National Park, Western Australia, 1980. Bulletin No. 1. National Parks Authority of Western Australia.*
- SEDGWICK, E.H. 1971. Movements of *Pardalotus substriatus*, Red-tipped Pardalote, in Western Australia. *West. Aust. Nat.* 12:1-4.

AN UNUSUAL HYPOGEAL FUNGUS (GASTEROMYCETE) FROM WESTERN AUSTRALIA

By G. BEATON, 4 Eighth St. Eildon, Victoria 3713.

In June 1983 I received from Fr A. R. Peile, Balgo Mission, Halls Creek, Western Australia two specimens preserved in liquid of a large hypogean fungus which upon examination was revealed to be of very unusual construction. The specimens were found in the Halls Creek area in sandy, spinifex (*Triodia*) country in May 1983. As received the fungus was irregularly globose to ellipsoidal, yellowish-cream when free of sand and with scattered,

root-like rhizomorphs attached to the outer surface (Fig. 2). When transversely sectioned there was revealed a black and in places partially veined gleba and a thick peridium somewhat suggesting a mature *Scleroderma* Pers. (Fig. 1E). Microscopic examination revealed clamped hyphae (Fig. 1A) in the outer layer of the peridium and also in the glebal hyphae. This established the fungus as a basidiomycete. Also present were masses of dark brown spores but no basidia; the spores had apparently budded off from the irregularly shaped hyphae present in the gleba in rather vaguely defined locules. An examination of all the basidiomycete literature available failed to reveal any genus bearing even a close relationship to the fungus.

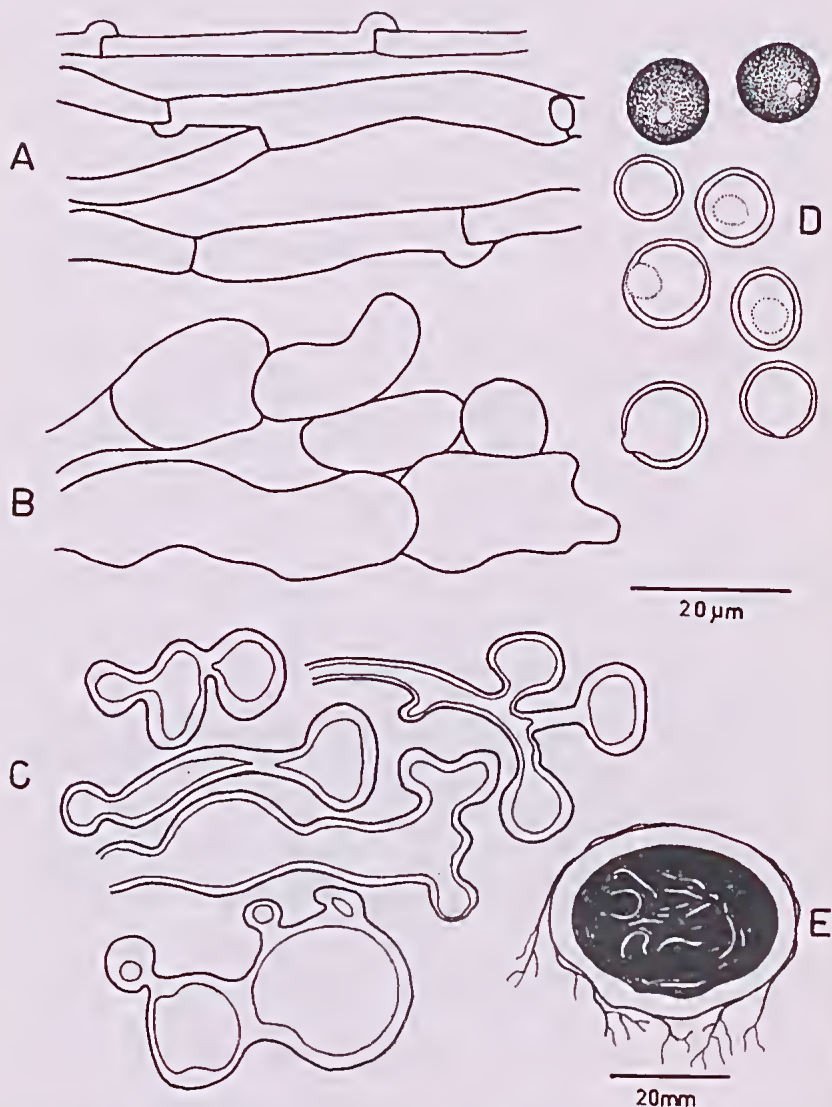


Figure 1. A. Clamped hyphae of the outer layer of the peridium
 B. Hyphae of the inner layer of the peridium
 C. Hyphae of locules developing chlamyds spores
 D. Chlamyds spores upper two and lower two showing germ pore or scar. others in optical section.
 E. Median transverse section of gasterocarp with rhizomorphs

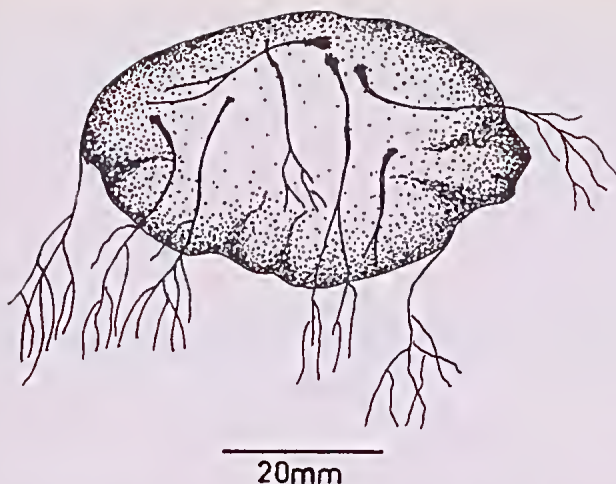


Figure 2. External appearance of the fungus, partly diagrammatic.

Part of the collection was sent to Dr David Pegler at Kew. After examination and consultation with Dr Derek Reid it was decided that the spores were chlamydo-spores (Fig. 1D). Dr Pegler stated "This is one of the most extraordinary fungi that I have ever come across . . . I also discussed it at length with Derek Reid with the result that we simply have no idea what it is." (pers. comm.). Part of the fungus was sent to Dr James Trappe, Corvallis, Oregon, U.S.A. for examination. He also could contribute nothing practical to the solution of the problem except to suggest that it might be an immature *Scleroderma*. This seems unlikely as the fungus appears to be fully mature and it does not seem possible for the pigmented spores to develop the spinose ornamentation characteristic of that genus.

The fungus is of significant size, up to 55mm diam. and it is desirable that its taxonomic position should be correctly determined. Therefore the following description and drawings are published in the hope that further specimens may be recognized and collected and a relationship established with a fungus producing basidia if one exists.

DESCRIPTION

Gasterocarps hypogaeal, to 55 by 35mm when fresh, irregularly subglobose to ellipsoidal peridium, yellowish-cream but appearing dark greyish-orange from attached particles of substrate, with scattered, concolorous rhizomorphs, texture elastic and probably with a fairly high liquid content when fresh; *peridium* to 5mm thick, appearing of uniform texture visually but composed of a variably thick outer layer of repent, hyaline, clamped hyphae 2-8µm diam. and a thick inner layer of variably interwoven, hyaline, irregularly shaped hyphae mostly 8-15µm diam. (Fig. 1B), both types of hyphae with slightly thickened walls; *gleba* uniformly blackish or marbled with mostly discontinuous venation which in places forms the walls or irregularly shaped and poorly defined locules that may disappear at maturity; hyphae of veins or tramal plates tending to be subparallel fascicles, clamped, 3-7µm diam; hyphae in locules contorted, walls variably thick, developing pigmented chlamydo-spores serially or laterally and with some globose to irregular cells inflated to 25µm diam., no basidia seen; spores at first hyaline, becoming brown at maturity, globose to broadly ellipsoidal, smooth, apedicellate, with one germ pore or attachment scar, many with one oil drop, walls to 1µm thick, 8.5-11.5 x 6.5-11.5µm.

The general appearance of the sectioned fungus does strongly suggest a mature but indehiscent *Scleroderma* apart from the absence of a developed basal attachment and in the presence of the scattered rhizomorphs. In its general structure it resembles *Scleroderma paradoxum* Beaton (Beaton & Weste, 1982), a fungus that was somewhat tentatively placed in that genus. No evidence can be found for a chlamydo-spore state in *Scleroderma* but the possibility of its existence cannot be excluded.

There are some aspects of the chlamydospore development in the locules that are not clear: it is to be expected that some partially pigmented spores would be present but none has been observed either attached to the parental hyphae or free; in spite of this there is little doubt that the spores develop in the manner suggested. Also scattered through the locules and apparently always attached to the hyphae are large, subglobose to irregular, thick walled cells to 25µm diam. (lower sketch, Fig. 1C). These cells can be almost twice the diameter of the largest chlamydospores and apparently never develop pigmentation. No suggestion can be made as to their function except that they may be nutrient storage receptacles.

Distribution of collection: Kew [K]; University of Melbourne [MELU]; University of Western Australia [UWA].

ACKNOWLEDGEMENTS

I wish to thank Dr Gretna Weste for advice and assistance and the School of Botany, University of Melbourne for provision of facilities.

GLOSSARY

- apedicellate: a spore without a projecting point of attachment to the spore producing cell.
basidiomycete: a fungus producing spores on basidia.
basidium: a sexual cell on which spores, usually four, are produced externally on extensions of the cell wall.
chlamydospore: an asexual spore originating by modification of an hyphal segment.
clamp: a by-pass connection between two cells, see Fig. 1A.
Gasteromycete: a fungus in which the spores develop inside an initially totally enclosed peridium.
gleba: the spore-bearing and other internal tissues of the fungus.
hyaline: colourless.
hyphae: the vegetative filaments of a fungus.
hypogaeal: developing under the ground.
peridium: the outer wall of the fungus which may be of several layers.
rhizomorph: a root-like aggregation of strands of hyphae attached to the outside of the fungus.
um: micrometre = one thousandth of a millimetre.

REFERENCE

- BEATON G. & WESTE G. 1982. A new species of *Scleroderma* from Victoria, Australia. *Transactions of the British Mycological Society* 79 (1) 41-43.

FROM FIELD AND STUDY

Taking of fish by a Whistling Kite in the Pilbara, W.A. — On July 23, 1983, we observed a Whistling Kite, *Haliastur sphenurus*, catching and eating a live Bony Herring, *Nematalosa erebi*, at a shallow pool on the Oakover River near the Marble Bar - Telfer Road crossing. This species is usually regarded as a scavenger and will eat any kind of carrion. A recent dietary study (Debus, 1983 : Corella 7(3) 62-63) does not refer to live fish being taken by the Whistling Kite.

The kite was initially seen gliding about 8m above the pool. Several attempts at catching a fish were then made by swooping down low over the water with legs extended. Following a successful strike, a live Bony Herring approximately 7.5cm long was plucked from the water and the kite perched in a Cadjeput (*Melaleuca leucadendra*) tree to feed. After consuming the head and internal organs the kite dropped the fish, which was retrieved by us and photographed for identification. Another successful strike was observed in the next five minutes. The presence beneath the perching site of a number of regurgitated pellets containing fish remains, suggested that fish was a common food item for the bird.

We are grateful to Dr G. Allen, Curator of Fishes, W.A. Museum, for identifying the fish.

— K. D. MORRIS, Department of Fisheries and Wildlife, P.O. Box 316, Karratha, W.A. 6714; C. NICHOLSON, Department of Conservation and Environment, P.O. Box 276, Karratha, W.A. 6714 and J. DALZIEL, Department of Industrial Development, P.O. Box 294, Karratha, W.A. 6714.